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A) Receive	Comments: ALL TRANSACTIONS  SICATION # 09-731, 637, Wide  A From < 17758516820 > at 2/19/03 4:35:09 PM [Eastern Standard Time]	EVEL WAY, RENO NV 89502

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I sesign the role of attorney

for Frank Cordiale and Dennis

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#### **TELECOPIER TRANSMITTAL**

#### CONFIDENTIAL

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SN09/731,637 Interview

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de ned menter

2.A prime mover comprising a cylindrical framework wound with at least two copper filaments, a steel piston disposed axially concentric with said framework, a power source for energizing one of said copper filaments with electric current which induces said steel piston to move axially toward a central position of said copper filaments, and at least one switch for controlling the energy flow in each of said copper filaments further comprising a permanent magnetic source for accelerating a reciprocation motion of said steel piston located at at least one end of said cylindrical framework.

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1. A prime mover comprising a cylindrical framework wound with at least two copper filaments, a steel piston of spherical shape disposed axially concentric with said framework, a power source for energizing one of said copper filaments with electric current which induces said steel piston to move axially toward a central position of said copper filaments, and at least one switch for controlling the energy flow in each of said copper filaments wherein said filaments are alternately energized to allow reciprocal movement.

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to:	Name: Company Telephon	1/19/2003 udson H Jones :	from:	Number of pages: _26  Name: Frank 5 Cordigle  Company: Telephone: 775 828 7392	
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Received from < 7758516819 > at 2/19/03 10:01:29 AM [Eastern Standard Time]

### CONFIDENTIAL

### **ORIGINAL**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

For BRUSHLESS ELECTRIC MOTOR

Examiner: JUDSON JONES

Art Unit: 2834

Art Unit:2834

Lawrend 11/1

This Amendment is in response to the Office Action dated

1.(Amended) The Prime Mover consists of a cylinder, steel piston, bar shape, alternately spherical shape piston disposed axially concentric with cylinder and connected to a connecting rod and crank shaft for rotation. The cylinder is cylinderical in shape constructed with an integral center divider of proper diameter and thickness so as to provide separation of windings. Material of construction is high temperature resistant polymer. The polymer cylinder is wound with copper filament above and below the center divider. Flush with each side of the divider are "half moon shaped", permanent magnets held inplace under the windings, these magnets are for the purpose of providing a control means for positioning the starting point of the piston when windings are de-energized. The other feature incorporated in the prime mover assembly and function is one circular permanent magnet located above top of piston chamber and mounted for adjustment to allow up and down movement of magnet as desired for inter-action with magnetic flux, thus allowing an unexplained speed increase of piston. This was proven in the operating prototype Brushless Electric Motor.

page 1 of

Monday John John John John Am

Received from < 7758516819 > at 2/19/03 10:01:29 AM [Eastern Standard Time]

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

#### AMMENDMENT

2.(Amended)[A prime mover as set forth in Claim 1] A prime mover as described in Claim 1 is equipped with a electrical control circuit that distributes current to upper and lower portions of windings. See Optical Switch Wiring Diagram page 1 of 6. Each part of the cylinder is separately wound with one continuous copper wire, upper portion of cylinder is wound clockwise and lower portion of cylinder is wound counter clockwise. The Windings of upper portion terminate at top juncture of cylinder retainer. The windings of the lower portion terminate at the bottom juncture of retainer.

Prime mover operation is accomplished by alternate energization of top and bottom windings which introduces alternating electromagnetic forces acting on the steel piston and establishing reciprocating motion.

There is a flywheel connected to the crank shaft that is equipped with a special high polished aluminum disk. The surface area at face of the disk is designed to interface during rotation with the optical switches beams to open and close voltage distribution, a section of the disk is covered with black dye to interrupt reflection to optical switches the remaining high polished surface area reflects back to optical switches and turns them on. This is accomplished by proper ratio of allocated polished surface area to the black dyed portion surface area of disk to cause a time duration, on, off. This is coordinated with the piston position in prime mover. The location of the optical switches is at 9 o'clock and 3 o'clock toward face of the flywheel disk mounted to allow time dwell adjustment and positioned in such manner as to allow proper interface with the disk. These optical switches are also enclosed to prevent tansient light sources that may cause interference with reflection to optical switches .

In re application FRANK CORDIALE Serial No. 09/731,637

Examiner: JUDSON JONES

Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

Dear Sir:

This Amendment is in response to the Office Action dated

3. (Amended) A prime mover as set forth in Claim [1] wherin incorporated in the prime mover assembly and function is one circular permanent magnet located above top of piston chamber and mounted for adjustment to allow up and down movement of magnet as desired.

Furthermore when the prime mover does not require an open lower portion another circular permanent magnet can be installed to allow a reciprocating piston situation for applications such as air compressor. For example two chamber one piston without any external connections.

Page 3 of

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

4.(Amended) A prime mover as set forth in Claim[1] wherin the windings are on a cylinder constructed of high temperature resistant polymer, that is equipped with a denter divider. Flush with each side of the divider are "half moon shaped", permanent magnets held inplace under the windings, these magnets maintain the positioning of the piston for automatic start up when windingss are deenergized.

page 4 of

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

5. (Amended) A prime mover as set forth in Claim [1] [wherin the cylinder Material of construction is high temperature resistant polymer. The inside diameter of the cylinder is bored and reamed to a slip fit tolerance for the piston .

page 5 of.

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

6. (Amended) A prime mover as set forth in Claim [1] [wherin The cylinder Material of construction is high temperature resistant polymer, and does not require an insert, instead the inside diameter of the cylinder is bored and reamed to a slip fit tolerance for the piston .

page 6 of.

page 6 of 6

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed: Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

7. (Amended) A prime mover as set forth in Claim [1] The cylinder is cylinderical in shape constructed with an integral center divider of proper diameter and thickness so as to provide separation of windings. Material of construction is high temperature resistant polymer.

page 7 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

8. (Amended) A prime mover as set forth in Claim [2] wherin the electrical control switches previously referred to as metal dectectors are now referred to more properly as optical switches. See Optical Switch Wiring Diagram page 6 Attachment number 6.

page 8 of

In re application FRANK CORDIALE Filed:

Serial No. 09/731,637 Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

9.(Amended) A prime mover as set forth in Claim[2] wherein the Electical Motor Control Board is shown in detail on Motor Control Circuit Attachment 7

This control board consists of manually dialed selection of on, off and speed control, by directing the function of the state of the art computer chips for acceleration or deceleration therby controlling the prime mover. The opening and closing of the time duration for current flow to each winding is controlled by a Dial Switch.

page 9 of

In re application FRANK CORDIALE Serial No. 09/731,637

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

40.(Amended)[A prime mover as set forth in Claim[ 1]wherein There is a flywheel connected to the crank shaft that is equipped with a special high polished aluminum disk. The surface area at face of the disk is designed to interface during rotation with the optical switches beams to open and  $\phi$ lose voltage distribution. A section of the disk is covered. with black dye to interrupt reflection to optical switches the remaining high polished surface area reflects back to optical switches and turns them on. This is accomplished by proper ratio of allocated polished surface area to the black dyed portion surface area of disk to cause a time duration, on , off. This is coordinate with the piston position in prime mover. The location of the optical switches is at 9 o'clock and 3 o'clock toward face of the ‡lywheel disk mounted to allow time dwell adjustment and positioned in such manner as to allow proper interface with the disk. These optical switches are also enclosed to prevent transient light sources that may cause interference with reflection to optical switches .

page 10 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

11. (Amended) A prime mover as set forth in Claim [1] wherin Said piston is attached to a connecting rod in an enclosure. This assembly provides rotational motion.

page 11 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

12. (Amended) A piston is disposed in a cylinder that is equipped with proper inlet and outlet connections to allow fluid flow in one direction bottom inlet top discharge to derate as a sump pump.

page 12 of

In re application FRANK CORDIALE Serial No. 09/731,637 Filed:

Examiner: JUDSON JONES

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

This Amendment is in response to the Office Action dated

13. (Amended) A prime mover comprising a cylindrical framework wound with at least two copper filaments a steel piston diposed axially concentric with said framework, a power source for energizing one of said copper filaments with electric current which induces said steel piston to move axially toward center position of said copper filaments and at least one switch for controlling the energy flow in each of said copper filaments wherein said piston reciprocates based upon the alternate energization of said coils, and exits said cylinder when an exit coil is not energized in one cycle.

page 13 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed: Art Unit:2834

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

Claim 14. (Amended) A prime mover as set forth in Claim 12 wherin said cylinder further comprises a fluid outlet to operate as a pump.

page 14 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

Claim 15. (Amended) A prime mover as set forth in Claim [1] The bias magnets are installed for the purpose of providing a control means for positioning the starting point of the giston.

page 15 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Hiled:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

Claim 16. (Amended) A prime mover as set forth in Claim [1] Each part of the cylinder is separately wound with one continuous copper wire, upper portion of cylinder is wound ¢lockwise and lower portion of cylinder is wound counter clockwise. The Windings of upper portion termiminate at top juncture of cylinder retainer. The windings of the lower portion terminate at the bottom juncture of retainer.

page 16 of

In re application FRANK CORDIALE Serial No. 09/731,637 Examiner: JUDSON JONES Filed:

Art Unit:2834

For BRUSHLESS ELECTRIC MOTOR

Claim 17. (Amended) Current energizes at least two copper filament to induce a piston toward center of other copper filament.

page 17 of